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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,803	12/07/2001	Norihide Ooyama	011659	7776

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EXAMINER

ALEJANDRO, RAYMOND

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,803

Applicant(s)

OOYAMA, NORIHIDE

Examiner

Raymond Alejandro

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1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 4A-B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "6" and "7" have both been used to designate the negative electrode (see pages 8-9). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "6" has been used to designate both the separator and the negative electrode (see pages 8-9). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," "The present invention", etc.

6. The disclosure is objected to because of the following informalities: in the Brief Description of the Drawings (page 5, lines 11-26), it is noted that the specification does not contain drawing description for Figures 4A and 4B (only for Figure 4 as a whole). However, it does contain drawing description for Figures 1A, 1B and 2A, 2B. Appropriate correction is required.

Claim Language Suggestions

7. Claim 1 (line5): it is suggested to change the recitation "band-like shape" to "band shape" so as to better reflect the intended scope of the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-2, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by the EP 997959 reference.

The instant application is directed to a sealed battery wherein the disclosed inventive concept comprises the specific battery configuration. Other limitations include the specific placement of the electrode tabs; the thermal fusion film; the battery arrangement and the specific battery chemistry.

With respect to claim 1:

The EP'959 reference discloses a non-aqueous electrolyte cell in which an unit cell is housed in an exterior packaging material of a laminated film and encapsulated on heat fusion; said unit cell is a wound assembly of elongated positive and negative electrodes each being constituted by a current collector and a layer of an active material formed thereon (claim 1/page 9, lines 14-24). It is disclosed that the unit cell comprises a solid electrolyte or gel-like electrolyte arranged between a layer of an active material of a positive electrode and a layer of an active material of a negative electrode (*the separator*) (SECTION 0017). It is also disclosed that the unit cell is accommodated in a packaging material 2 of a laminated film obtained on molding with deep drawing in meeting with the shape of the unit cell 1, and the rim portion of the resulting assembly is heat-fused for hermetic sealing (SECTION 0017). It is disclosed that the exterior package material of the laminated aluminum film is then folded back on itself along its mid line to enclose the unit cell. The opened three-sides of the exterior packaging material is then sealed using a heat-sealing devices (SECTION 0063). It is noted that aluminum is a malleable metallic element, that is, capable of being extended or shaped by beating or by

pressure, or capable of being altered or deformed by outside forces, that is to say, aluminum has the capacity for adapting shape changes.

Figures 1-2 below illustrate structures of the pre-sealed and sealed solid electrolyte cell, respectively.

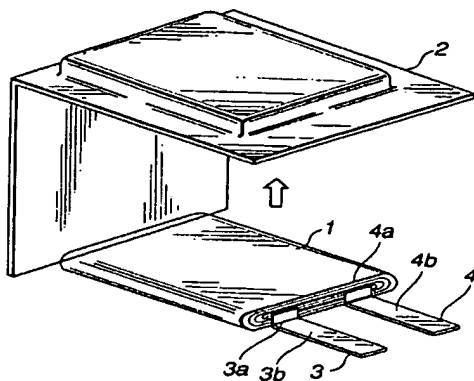


FIG. 1

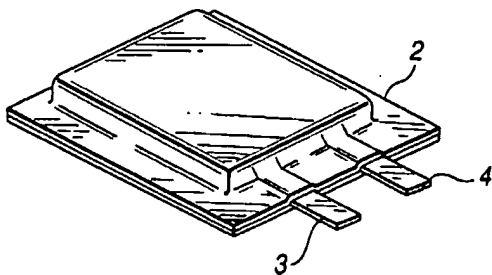


FIG. 2

The EP'959 reference teaches that each elongated positive and negative electrodes is constituted by a current collector and a layer of an active material formed thereon (claim 1/page 9, lines 14-24). Further, the EP'959 discloses that the negative and positive terminals are comprised of a current collector 11a and 12a, on each side of which is formed a layer of an active material for the negative and positive terminals 11b and 12b. These layers 11b and 12b are partially removed to expose the current collectors 11a and 12a and the negative terminal leads 13

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and 14 are mounted on the exposed portion of the current collectors 11a and 12a (SECTIONS 0023-0024). Thus, it is understood that active material layers are formed on the surfaces of the curved portions positioned on outermost periphery of each positive and negative electrode because active material layers are only removed at the current collector site where the terminal leads are mounted.

It is further disclosed that the wound assembly is flat-shaped (claim 2/page 9, line 29). Figure 8 shows an unit cell having a terminal lead and a positive terminal lead arranged outside of the winding member. *From Figure 8 below it is apparent that the positive and negative electrode are wound-up by having plane portions and curved portions and having a band shape identical to the instant claims.*

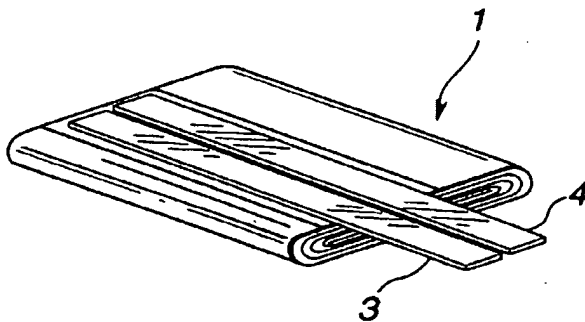


FIG.8

As for claim 2:

Comparative Example 2 and Figure 8 above show both the negative terminal lead 3 of the negative terminal and the positive terminal lead 4 of the positive terminal placed on the outer side of the winding electrode structure. It is disclosed that the resulting wound assembly is

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sheathed in an aluminum laminate film as an exterior packaging and then heat sealed (SECTION 0067/ COMPARATIVE EXAMPLE 2).

With respect to claim 4 (NOTE: this also applies to claim 5 rejected below):

It is disclosed that the unit cell is accommodated in an exterior packaging material of the laminated aluminum film molded by deep drawing to profile the outer shape of the unit cell (SECTION 0062). The exterior packaging material is folded back on itself to enclose the unit cell; and the sides of the exterior packaging material is then sealed (SECTION 0063); the tab terminals are protruded as external terminals from the exterior packaging material of the cell (SECTION 0064/ Figure 1). ***Figure 1** above depicts that the exterior packaging material accommodates the battery element in its recessed portion and that the terminal lead are placed on the plane portion of the exterior packaging material.*

As to claim 6:

It is disclosed that battery chemistry is for lithium ion polymer (SECTION 0002/0039).

Thus, the claims are anticipated.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the EP 997959 as applied to claim 2 above, and further in view of the EP 1035611.

The EP'959 is applied, argued and incorporated herein for the reasons above. However, the EP'959 do not expressly disclose: a) the specific layer coated with a thermal fusion material attached where the positive and negative electrode conductive tabs are sealed with the external material; and b) the specific battery accommodation now comprising the specific thermal fusion layer (as applicable to claim 5 which depends from claim 3).

With respect to claims 3 and 5:

The EP'611 discloses that as shown on Figures 2 and 4, the positive electrode lead 7 and the negative electrode lead 8 are sandwiched by the sealing portion in which is the periphery of the casing film. Moreover, a resin film 9 is disposed in each of the portions in which the positive-electrode lead 7 and the negative electrode lead 8 are brought into contact with the casing film 6 (SECTION 0022, particularly, page 4, lines 14-16).

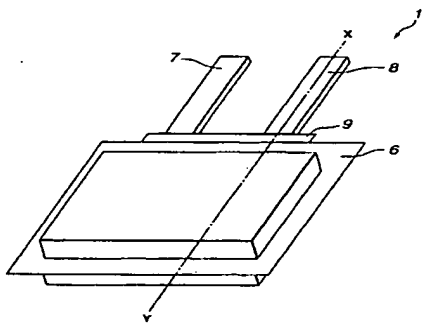


FIG. 2

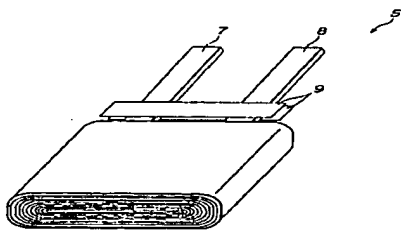


FIG. 4

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As to claim 5 (NOTE: see also rejection for claim 4 above):

It is further disclosed that a polyethylene film was applied to the portion in which the positive electrode lead, the negative electrode lead and the casing film overlap. Then, the periphery of the casing films was heat sealed. Thus, the positive electrode lead and the negative electrode lead were sandwiched in the sealed portion between the casing films. Moreover, the wound electrode was hermitically enclosed in the casing films (SECTION 0064).

Further, as is apparent from the Figures 2 and 4 above, the battery element is accommodated in a recessed portion of the casing film, and the electrode leads are placed on its plane portion and the cell is sealed.

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to make the specific layer coated with a thermal fusion material attached where the positive and negative electrode conductive tabs are sealed with the external material of the EP 1035611 reference in the sealed battery of the EP 997959 reference as the EP'611 teaches that by placing the resin film on the portion in which the electrode leads and the casing film overlaps, the wound electrode is thus hermetically enclosed in the casing films. Accordingly, defective sealing caused due to the meeting contact point in the sealed portion can considerably be prevented. Thus, introduction of moisture into the casing film containing the battery element through a defective sealing portion or a broken portion of the casing, and therefore, deterioration in the performance of the battery caused from moisture introduced into the battery can be prevented.

As for the specific battery accommodation, it would have been obvious to one skilled in the art at the time the invention was made to make the specific battery accommodation

comprising the specific thermal fusion layer of the EP1035611 in the sealed battery of the EP997959 as the EP'1035611 teaches that that by placing the resin film on the portion in which the electrode leads and the casing film overlaps, the wound electrode is thus hermetically enclosed in the casing films. Accordingly, defective sealing caused due to the meeting contact point in the sealed portion can considerably be prevented. Thus, introduction of moisture into the casing film containing the battery element through a defective sealing portion or a broken portion of the casing, and therefore, deterioration in the performance of the battery caused from moisture introduced into the battery can is prevented.

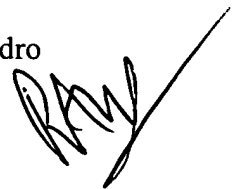
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (703) 306-3326. The examiner can normally be reached on Monday-Thursday (8:30 am - 7:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Raymond Alejandro
Examiner
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A handwritten signature in black ink, consisting of the letters 'RAW' followed by a long, sweeping checkmark-like stroke.